# N° 17,898 A.D. 1889

*Date of Application, 9th Nov., 1889*
*Complete Specification Left, 9th Aug., 1890—Accepted, 13th Sept., 1890*

## PROVISIONAL SPECIFICATION.

## Improvement in Apparatus for Ventilating and Destroying Noxious Vapours of Drains and Sewers, also Hospitals and other Buildings.

I Alfred Young Manufacturing Chemist, The Hazelwoods, 137 Holmesdale Road, South Norwood, in the County of Surrey, do hereby declare the nature of this invention to be as follows:—

My invention consists of the improvement hereinafter described, *viz.*: Two cylindrical cast metal receivers, or chambers, (bell shaped).

First chamber to be made with arched roof or top, with a three inch diameter flange pipe through the centre of said chamber, standing about three inches high from the outside of arched roof or crown of said chamber, this said pipe to be included in the casting.

Second chamber to be made to set or fit to the first arch roof chamber, with a three inch outside flange joint projecting all round, fastened with nut, and screw bolts, packed with asbestos between.

Size of number one receiver or chamber to be about nine inches in diameter, six inches high to crown of arch, bottom about four inches diameter, with a three inch flange joint to be fastened with nut, and screw bolts, with asbestos packing between.

Internal fitting of number one receiver or chamber, is a fireplace with metal frame having openings (similar to asbestos stoves) fitting close home to sides of said chamber, resting on a ledge made in the casting, near the bottom part of chamber in a flat position, with an air-tight fitting door to said fireplace, about four and half inches long, by three inches high, to attend to gas lighting.

Internal fitting of number two receiver or chamber, is a three inch metal coil, (similar to still coil) with a flange each end to connect.

Size of number two receiver or chamber to be the same as number one chamber, excepting the top part which will be about three inches in diameter, with a flange joint to connect and continue circuit of metal coil up the lamp post or column to ventilator on top, bottom part of said chamber to have a hole sufficient size to admit of flange pipe passing through from top or roof of arch of number one chamber.

### Making up Complete.

Number one chamber is attached to street sewer, at the four inch flange joint, at the bottom end, then connect gas, and burner inside asbestos fireplace, of number one chamber, placing in bed of asbestos, thence fasten flange pipe of metal coil to flange pipe of number one chamber at the top, or roof of arch, also place number two chamber upon the top of number one, and fix flange joints, likewise connect top end of metal coil flange joint to flange joint of number two chamber, continuing the metal coil up the lamp post or column to the ventilator at the top, thus completing the circuit of sewer up draught; or current, being perfectly air tight, except what comes out from the sewer.

The whole of this apparatus, or sewerage gas destructor is placed inside the base of the lamp post or column under lock and key.

My said invention has for its object a method for specially ventilating the sewers, and all such places, is so constructed that a most powerful up current is obtained, while a most important feature is with this invention, there is no possibility of any down-draught whatever.

It acts as a perfect destroyer of sewer gas by creating a partial vacuum (by intense heat) causing the foul air to rush from the sewer direct up into the bed of

[*Price 8d.*]

asbestos fire, thence through metal coil out through ventilator into the atmosphere thoroughly purified.

Another object is the prevention of contamination of the atmosphere of all large cities and towns, by the exhalations arising from sewer gas, also to ventilate and purify the vitiated atmosphere of fever hospitals, &c.

The sewerage gas destructor can be advantageously applied to our present existing ventilators and manholes as well as to street lamps, thereby consuming all the poisonous gases which are now diffused into the atmosphere to the great detriment of the health of the community at large.

The lamp post or column will be so constructed to carry a street lamp on the top, as well as sewerage gas destructor at the base.

One other most important object in connection with this invention is having the double chamber service, also the metal coil, one chamber with the asbestos fire, the other with coil, which has an intense heat, of (400 degrees) so that any germs of life traversing this metal coil is instantly destroyed, thus serving, and providing a double action of decomposition.

Dated this Ninth day of November 1889.

ALFRED YOUNG.

## COMPLETE SPECIFICATION.

## Improvement in Apparatus for Ventilating and Destroying Noxious Vapours of Drains and Sewers, also Hospitals and other Buildings.

I ALFRED YOUNG, Manufacturing Chemist, The Hazelwoods 137 Holmesdale Road South Norwood in the County of Surrey, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of my invention is to extract consume or effectually treat noxious gases or vapours from drains and sewers or the air during its passage through a ventilator from the rooms of hospitals and other buildings.

For dealing with noxious gases or vapours from drains and sewers I provide special apparatus to be fixed below the surface and for ventilating purposes I provide similar apparatus to be fitted outside the building to be ventilated and connected with a funnel shaped ventilator protruding within the building through the ceiling of the room to be ventilated.

In the accompanying drawings Figure 1 is a sectional elevation of the apparatus for use with drains and sewers and Figure 2 is an elevation of the apparatus as applied to ventilators for buildings the internal parts being shown in dotted lines.

The apparatus as shown in Figure 1 consists of a bell shaped receptacle divided into two chambers A and B formed by bolting together the two parts of which the receptacle is formed, the joint at the junction of the two parts being closed hermetically preferably by means of an asbestos washer. Into the lower chamber A I convey a gas pipe with burner C controlled by the stop cock D which may be fitted in any accessible position not necessarily where the apparatus is fixed.

Within the lower chamber A I place a grid E which serves to support some refractory material such as asbestos employed in conjunction with the gas fuel to provide a glowing mass through which the noxious gases or vapours from the drain or sewer are to pass. Sufficient heat however may be provided by means of gas burners alone without the intervention of the asbestos.

The furnace thus provided causes an upward current from the drain or sewer the velocity of which may be regulated by introducing a series of bends in the pipe F which connects the furnace with the drain or sewer.

The upper chamber B is heated by the furnace created in the lower chamber A and contains a serpentine pipe G which constitutes the only outlet from the lower chamber A and may be conducted to any suitable point at which the discharge of the products of combustion is to be permitted ; the most convenient point would generally be at the foot of the nearest street lamp post, the hollow column of which would serve to convey and distribute the same in the surrounding atmosphere.

In the lower chamber A I provide an opening through which the asbestos may be admitted and close the same hermetically by means of a cover in which I provide a smaller aperture for examination and lighting purposes capable of being readily opened and closed hermetically without disturbing the joint of the larger opening.

The operation of the apparatus is as follows:—

The furnace represented by the heated mass of asbestos in the lower chamber A induces a current of noxious gases or vapours from the drain or sewer passing through the serpentine pipe F thence through the grid E into the chamber A in which its temperature is raised to a point at which any organic matter would be decomposed. The products of combustion arising pass out by the serpentine pipe G which traverses the upper chamber B several times in its course in order to increase the time during which the noxious gases or vapours remain under the heating treatment.

For ventilating purposes I employ similar apparatus as shown in Figure 2 connected with a funnel shaped ventilator H and surmounted by a cowl J which in conjunction with the serpentine pipe G avoids any down draught.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is:—

1. In apparatus for treating noxious gases or vapours from drains and sewers the combination of a furnace chamber A and a heating chamber B with serpentine inlet and outlet pipes for regulating the passage of the current through the furnace and the heating chamber and avoiding down draught substantially as described.
2. In apparatus for ventilating rooms of buildings the combination of a ventilator H, a furnace chamber A, a heating chamber B, a serpentine outlet pipe G and a cowl J for purifying the air passing out from the building through the ventilator substantially as described.

Dated this 8th day of August 1890.

AYRTON & THOMAS,
Agents for the Applicant.

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YOUNG'S COMPLETE SPECIFICATION.

(1 SHEET)

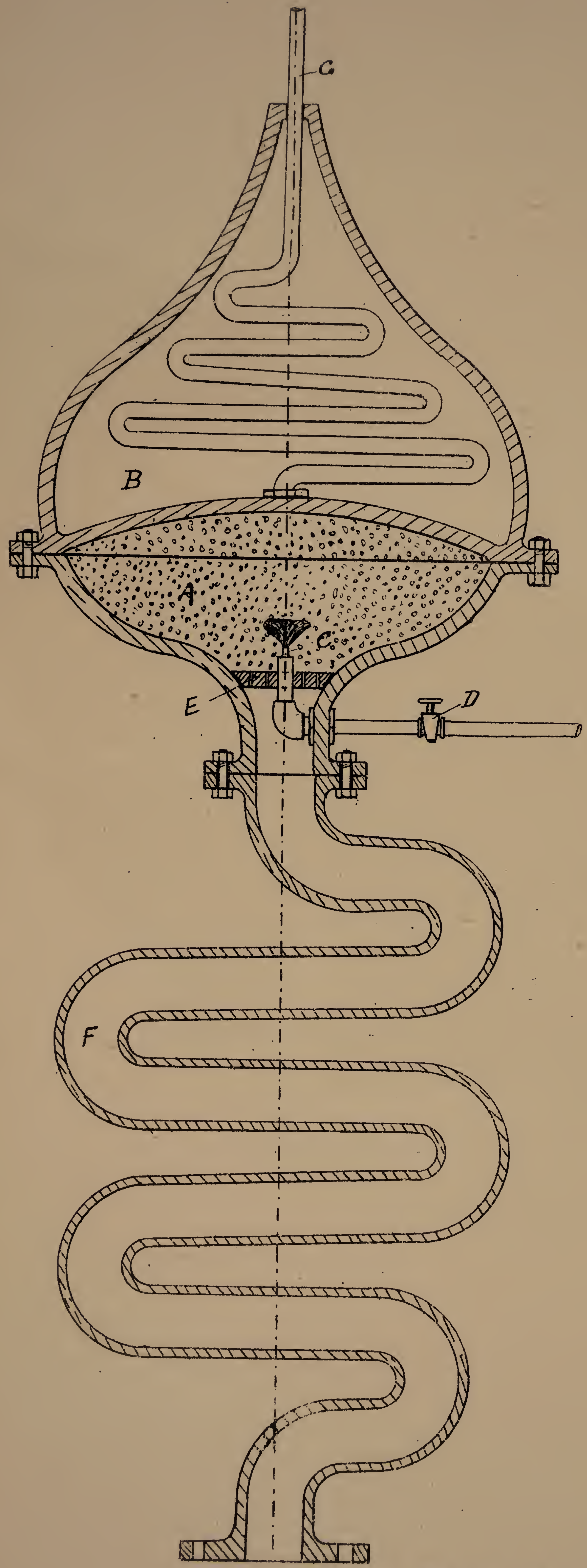

Fig. 1

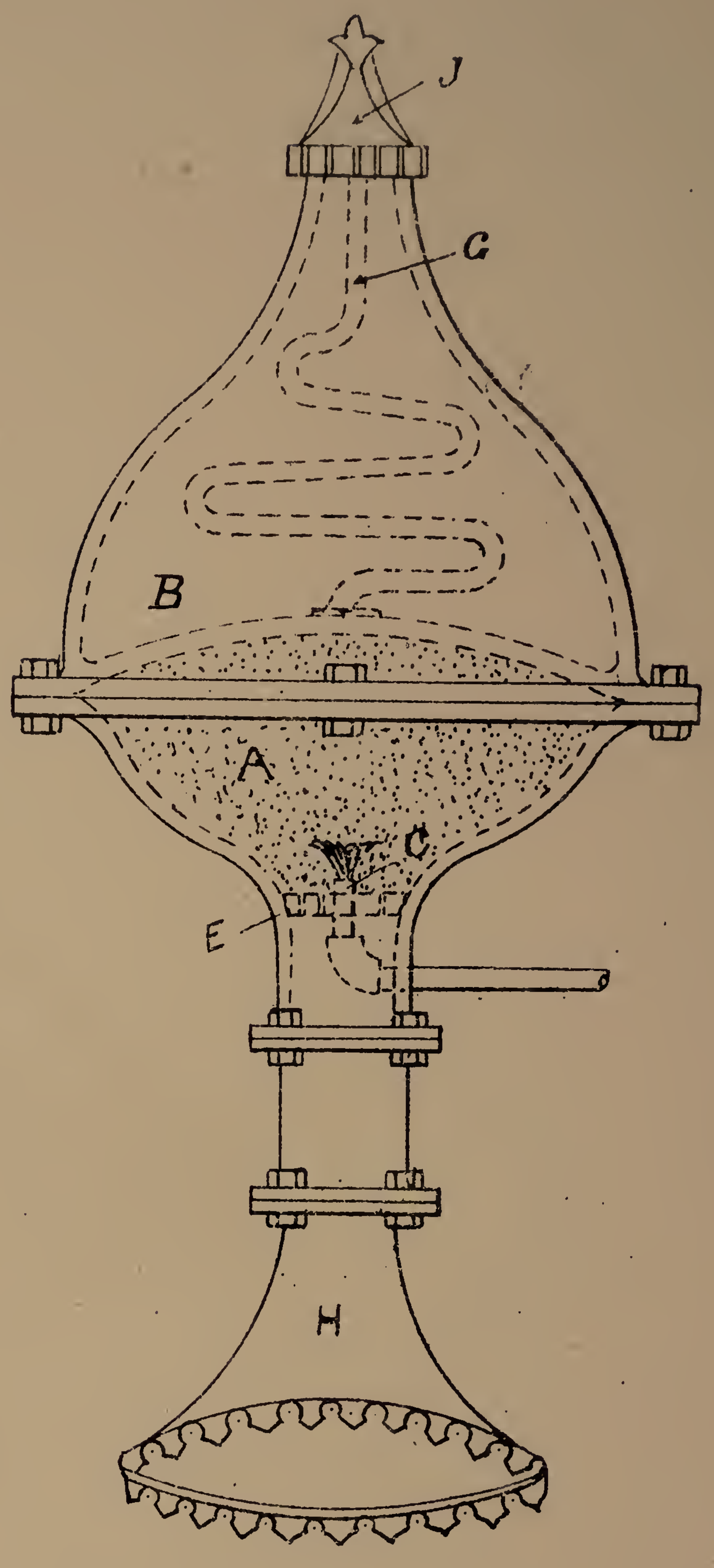

Fig. 2

[This Drawing is a reproduction of the Original on a reduced scale.]

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for Her Majesty's Stationery Office. 1890.

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